Resources, Conservation and Recycling, 11 (1994) v-x+1-339
Elsevier Science B.V.

Special Issue

Environmental biotechnology in waste treatment and recycling

Proceedings of the International Conference held at
Hong Kong Baptist College

12–14 January 1993

Edited by

Brian A. Whitton
Department of Biological Sciences, University of Durham, South Road, Durham DH1 3LE, UK

and Ming H. Wong
Department of Biology and Centre for Waste Recycling and Environmental Biotechnology, Hong Kong Baptist College, 224 Waterloo Road, Knowloon, Hong Kong

Guest Editorial Board

S.J. Allen (UK)
A.J.M. Baker (UK)
Y. Chisti (Canada)
J.B. Ellis
M.G. Healy (UK)
C. Polprasert (Thailand)
D.L. Wise (USA)

Sponsors

Caltex Green Fund
Croucher Foundation
Hong Kong Baptist College
Hong Kong British Council
United Nations Environmental Programme

CONTENTS

Guest Editorial
B.A. Whitton (Durham, UK) and M.H. Wong (Hong Kong) vii

Short Reviews
Use of macrophytes for pollution treatment in urban wetlands
J.B. Ellis, R.B. Shutes, D.M. Revitt and T.T. Zhang (London, UK) 1
Bioreactor applications in waste treatment
M. Moo-Young and Y. Chisti (Waterloo, Ontario, Canada) 13

Research Papers

Peat as an adsorbent for dyestuffs and metals in wastewater
S.J. Allen, M. Murray, P. Brown and O. Flynn (Belfast, Northern Ireland, UK) ... 25

The possibility of in situ heavy metal decontamination of polluted soils using crops of metal-accumulating plants
A.J.M. Baker (Sheffield, S.Yorks., UK), S.P. McGrath, C.M.D. Sidoli (Harpenden, Herts., UK) and R.D. Reeves (Palmerston North, New Zealand) 41

Management of the sawdust litter in the 'pig-on-litter' system of pig waste treatment
D.K.O. Chan, D. Chaw (Hong Kong) and C.Y.Y. Lo (New Territories, Hong Kong) 51

Determination of dissolved oxygen limitation in aerobic biofilm reactors
G.H. Chen, W.J. Ng (Singapore), H. Ozaki and Y. Terashima (Kyoto City, Japan) 73

Performance of upflow anaerobic biofilter process in pharmaceutical wastewater treatment
Y.F. Chen, W.J. Ng and M.G.S. Yap (Singapore) 83

Mobility of oil and other sludge constituents during oily sludge treatment by landfarming
I.H. ElBagouri, A.S. ElNawawy, M. Abdal, R. Al-Daher and M.S. Khalafawi (Safat, Kuwait) 93

Effect of cardboard delignification on the production of protein-enriched fermented fodder in submerged cultures
A.S. ElNawawy, Z. Baroon, N. Samarah and A. Khamis (Safat, Kuwait) 101

Plant growth and uptake of mineral elements at an oily sludge landfarming site in Kuwait
A.S. ElNawawy, I.H. ElBagouri, R. Al-Daher and S. Khalafawi (Safat, Kuwait) ... 111

Comparison of startup performance of four anaerobic reactors for the treatment of high-strength wastewater
H.H.P. Fang and H.K. Chui (Hong Kong) 123

Bioconversion of marine crustacean shell waste
M.G. Healy (Belfast, Northern Ireland, UK), C.R. Romo (Santiago, Chile) and R. Bustos (Belfast, Northern Ireland, UK) 139

A comparison of biological nutrient removal in intermittent cyclic and continuous activated sludge systems
K. Ho, P.F. Greenfield, L.L. Blackall, P.R.F. Bell and A. Krol (St. Lucia, Queensland, Australia) 149

Growth and macronutrient removal of water hyacinth in a small secondary sewage treatment plant
Y.B. Ho and W. Wong (Hong Kong) 161

Bioconversion of waste keratins: wool and feathers
C.M. Hood and M.G. Healy (Belfast, Northern Ireland, UK) 179

A pilot plant using immobilized cells for dye removal from dye manufacturing wastes
H. Jian, X. Huang, S. Li, S. Zhou, Y. Cen (Guangzhou, China) and W. Tso (Hong Kong) 189

Influence of organic-N sources on an algal wastewater treatment system
P.S. Lau, N.F.Y. Tam and Y.S. Wong (Kowloon, Hong Kong) 197

Operation strategy of a sequencing batch reactor for simultaneous removal of wastewater organic matter and nutrients
G.L.W. Leung and N.F.Y. Tam (Kowloon, Hong Kong) 209

Preliminary economic analysis for production of calcium magnesium acetate from organic residues
I.A. Palasantzas and D.L. Wise (Boston, MA, USA) 225
Productive utilization of pig farm wastes: a case study for developing countries
C. Polprasert (Bangkok, Thailand), P.Y. Yang (Honolulu, HI, USA), N. Kongsricharoern and W. Kanjanaprapin (Bangkok, Thailand) 245
Assessing toxicity of spent pig litter using a seed germination technique
N.F.Y. Tam and S. Tiquia (Kowloon, Hong Kong) 261
Metabolic pathway of anaerobic digestion and reaction rate limiting step of 2,4,5-TCP
S.-K. Tseng and C.-H. Lin (Taipei, Taiwan) 275
Possible microbial utilization of sago processing wastes
S. Vikineswary, Y.L. Shim, J.J. Thambirajah and N. Blakebrough (Kuala Lumpur, Malaysia) 289
Sewage sludge as organic ameliorant for revegetation of fine bauxite refining residue
J.W.C. Wong (Kowloon, Hong Kong) and G. Ho (Murdoch, W.A., Australia) 297
Physiological effects of copper treatment and its uptake pattern in *Festuca rubra* cv. Merlin
Y.S. Wong, E.K.H. Lam and N.F.Y. Tam (Kowloon, Hong Kong) 311
Enhanced nutrient removal by oxidation-reduction potential (ORP) control in laboratory-scale extended aeration reactors
C.W. Yu, C.K. Lo (Hung Hom, Hong Kong), S. Traynor (Plymouth, UK) and N.F.Y. Tam (Kowloon, Hong Kong) 321